

## ABSTRACT

A production method for a semiconductor device, including the steps of: forming a semiconductor layer of the first conductivity on the semiconductor substrate; forming a trench in the semiconductor layer, the trench penetrating through the semiconductor layer to reach the semiconductor substrate; filling a filling material in a predetermined bottom portion of the trench, so that a filling material portion is provided in the bottom portion of the trench up to a predetermined upper surface position which is shallower than an interface between the semiconductor substrate and the semiconductor layer; and, after the filling step, introducing an impurity of the second conductivity into a portion of the semiconductor layer exposed to an interior side wall of the trench.